Easterling, Deborah

From: John Finnigan <jfinnigan@edf.org>
Sent: Friday, April 19, 2019 6:44 PM
To: PSC_Contact
Subject: [External] PSC Website Comments:
Attachments: S.C. - Duke Energy EV bus proposal - EDF supplemental comments.docx

To The Honorable Jocelyn G. Boyd:

Please file the attached supplemental public comments in the two dockets referenced in the comments.

Thanks,
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April 19, 2019

The Honorable Jocelyn G. Boyd
Chief Clerk/Administrator
The Public Service Commission of South Carolina
101 Executive Center Drive, Suite 100
Columbia, SC 29210

In re: Application of Duke Energy Carolinas, LLC for Approval of Proposed Electric Transportation Pilot and An Accounting Order to Defer Capital and Operating Expenses, Docket No. 2018-321 E

Application of Duke Energy Progress, LLC for Approval of Proposed Electric Transportation Pilot and An Accounting Order to Defer Capital and Operating Expenses, Docket No. 2018-322 E

Dear Ms. Boyd:

I am writing this letter to submit EDF's supplemental comments in support of the application by Duke Energy Carolinas, LLC and Duke Energy Progress, LLC in the above-referenced dockets for approval of a pilot program related to electric transportation. My comments will focus on the following components of Duke Energy's proposal: (1) EV school bus charging; (2) EV transit bus charging; and (3) Direct Current (DC) Fast Charging. EDF strongly supports Duke Energy's proposed pilot program and simply offers these supplemental comments to improve the program.

EDF appreciates the opportunity that the Office of Regulatory Staff and Duke Energy provided to have collaborative discussions regarding Duke Energy's proposal. EDF also appreciates the changes that Duke Energy has made in its amended application. EDF supports Duke Energy's proposal to provide incentives for EV deployment and to offer time-of-use rates. EDF provides the following suggestions on how the pilot program could be improved.

In our initial comments, we recommended that the Commission to take certain actions to plan for the growing deployment of EVs, and these recommendations still apply:

- The Commission should convene a working group with the electric utility companies and all interested stakeholders to study how to remove barriers to a robust deployment of EV charging services for light-, medium- and heavy-duty vehicles.

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- The working group should include state transportation and economic development officials and planning officials in major cities, who can provide input on high volume transportation corridors, tourism, economic development and disadvantaged communities' needs.

- The working group should ensure that charging services are available in the appropriate areas and at the appropriate speeds.

- Utilities should conduct load research studies on the impact of EV charging loads – including from medium-and-heavy duty vehicles -- on the grid and should incorporate EV charging loads in their integrated resource planning (IRP) and distribution system design planning. Duke Energy's Amended Application states at page 16 that it will study load management methods in the pilot program, so it would be helpful for the Commission to begin stakeholder discussion of how to incorporate this load management information into IRP planning and distribution system design planning.

EDF's initial comments also recommended that Duke Energy should include an option for school districts to purchase EV buses by financing the purchase through monthly installment payments based on total-cost-of-ownership savings. Based on comments from the Office of Regulatory Staff, EDF now understands that the South Carolina Energy Office would first need to include this in the state energy plan. EDF recommends that, if this occurs while the pilot program is pending, then Duke Energy and stakeholders should confer on amending the pilot program to include on-bill financing.

Duke Energy's Amended Application states at page 16 that it will evaluate time-of-use rates as one form of load management. EDF recommends that, prior to program commencement, Duke Energy should provide stakeholders with all the types of load management methodologies that it intends to study, and give stakeholders an opportunity for comment. EDF submits that a robust load management plan is important for deriving the greatest value from the pilot program. Duke Energy should also share its plans for testing Vehicle-to-Grid capabilities in the same manner.

Finally, EDF recommends that Duke Energy revise the Amended Application to include a plan to mitigate demand charges during the term of the pilot program. Demand charges can have a disproportionate impact on the customer's electricity bill. Customers might have a negative experience with this program if Duke Energy does not mitigate demand charges during the pilot program. This could create a barrier to further adoption of EV buses.

Demand charges are a function of how much electricity the customer uses and when the customer uses the electricity. The following example shows how two customers with the same amount of monthly electricity usage (5,000 kWh), but different monthly peak demands (500 kW vs. 50 kW), can have extremely different monthly electricity bills.[1]

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[1] U.S. DOT Federal Transit Administration, *Peak Demand Charges and Electric Transit Buses* at 21 (October 1, 2014), available at: https://calstart.org/libraries-publications-peak_demand_charges_and_electric_transit_buses_white_paper-sflb-ashx/

Demand Charge Impact on Two Customers with the Same Usage

	Customer A	Customer B
Energy Usage	5,000 kWh	5,000 kWh
Energy Charge	5,000 kWh x $0.10 = $500	5,000 kWh x $0.10 = $500
Peak Demand	500 kW	50 kW
Peak Demand Charge	500 kW x $15.00 = $7,500	50 kW x $15.00 = $500
Total Charges	**$8,000**	**$1,250**

As a practical example, consider a school that usually charges its buses in the evening to take advantage of the lower electricity rates available under time-of-use rates. Suppose the school takes the students home at the end of the day, then returns and immediately re-charges the buses to drive the football team to an away game. Even though this only occurs a couple of times during a month, this might lead to an unexpectedly high bill, similar to Customer A in the example above.

Duke Energy should mitigate the demand charge during the pilot program because:

- School districts and mass transit agencies are public entities funded by taxpayers. Mitigating the demand charges would help conserve their scarce resources and would protect taxpayer funds.

- Schools and mass transit agencies will not have the resources to pay for outside services to manage their EV charging practices, and they will need to learn as they go.

- EV charging will be new for schools and mass transit agencies, and Duke Energy will need time to educate them on the best practices for charging their buses.

- The demand charge is calculated based on the customer's monthly peak demand. The peak demand may occur during a time when the school is charging its buses or not. Applying a demand charge will make it very difficult to compare the cost of operating an EV bus versus the cost of operating a diesel bus.

- If demand charges are not mitigated, a school district or mass transit agency that does not manage its charging prudently, due to lack of experience, could receive unexpectedly high bills, leading to customer dissatisfaction. This might deter other school districts and mass transit agencies from purchasing EV buses.

- The size of this pilot program is so small that it will not have a material impact on Duke Energy's revenues.

- Duke Energy, the Office of Regulatory Staff and other stakeholders need time to work collaboratively to develop a rate design that gives Duke Energy an opportunity to recover

its costs and is a just and reasonable solution for the school districts, mass transit agencies and all customers.

Utilities in other states have mitigated demand charges during the early stages of EV adoption by commercial customers. Here are examples of the mitigation plans used by other utilities:

- Pacific Gas & Electric Company uses a "subscription fee" in 10 kW or 50 kW increments, depending on maximum anticipated demand. This allows the customer to choose how much electricity they will need for EV charging, and the subscription levels can be changed on a monthly basis. The subscription charges are much lower than traditional demand charges and result in more predictable electricity bills.

- Southern California Edison proposed to waive all demand charges for the first five years of their commercial EV charging program to give them time to educate their customers about managed charging and for customers to adapt their charging practices to avoid high demand charges.

- Xcel Energy will cap its demand charge at a pre-determined level for customers with commercial EVs to avoid unexpectedly high bills.

- National Grid gives customers bill credits to fully offset the impacts of commercial EV charging on demand charges.[2]

The issue of demand charges also applies to DC Fast Charging Stations. When these stations are initially deployed, few customers will be using them and the demand charge will make the stations unprofitable. As a result, utilities in other jurisdictions have developed plans to mitigate the demand charge, as discussed in the following report:

> Several utilities proposed limited-time demand charge reductions or alternative charges for DC fast charging station operators in order to promote the development of these stations, since demand charges can often make fast charging stations cost-prohibitive. Demand charge reductions were approved in Nevada, Oregon, Pennsylvania, and Rhode Island, while utility proposals are under consideration in California, Massachusetts, and New York.[3]

EDF therefore submits that the Commission should require Duke Energy to mitigate the impact of demand charges for this pilot program. EDF also recommends that the Commission

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[2] Union of Concerned Scientists, *Utility Investment in Truck and Bus Charging: A Guide for Programs to Accelerate Electrification* at 9 (April 2019), available at: https://www.ucsusa.org/clean-vehicles/electric-vehicles/electric-utility-investment-truck-and-bus-charging

[3] North Carolina Clean Energy Technology Center, *50 States of Electric Vehicles – Q4 2018 Quarterly Report and 2018 Annual Review* (February 2019), available at: https://nccleantech.ncsu.edu/wp-content/uploads/2019/02/Q4-18_EV_execsummary_Final.pdf

convene a collaborative working group to study customer EV charging practices and the impact on demand charges. The working group should be tasked with developing rate designs that equitably balance all stakeholder interests. The rates should give the utility an opportunity to recover its revenues while providing fair rates for owners of medium- and heavy-duty buses and trucks and DC fast charging stations. South Carolina is a center for medium- and heavy-duty EV manufacturing and the Commission should develop rate designs that give these industries an opportunity to grow and expand.

EDF thanks the Commission for the opportunity to provide these comments on Duke Energy's proposed pilot program.

Respectfully submitted,

/s/ Jason Mathers

Director, On-Road Vehicles
Environmental Defense Fund